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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/993,678	11/27/2001	Satoshi Hanada	Q67285	7280

7590 04/01/2003  
SUGHRUE MION, PLLC  
2100 Pennsylvania Avenue, NW  
Washington, DC 20037-3213

EXAMINER

CHANG, VICTOR S

ART UNIT	PAPER NUMBER
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1771

DATE MAILED: 04/01/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/993,678

Applicant(s)

HANADA ET AL.

Examiner

Victor S Chang

Art Unit

1771

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Park et al. (US 5116881).

Park's invention is directed to a thermoformable, rigid or semi-rigid polypropylene foam sheet (Abstract). In one embodiment, Park teaches that the multilayer foam sheet comprises at least one layer of the polypropylene foam layer and one functional layer (column 8, lines 38-46). In cases where the materials utilized as the functional layer are not compatible with or adherent to the polypropylene foam layers, it may be desirable to utilize "tie" (i.e., adhesive) layers between the functional and polypropylene foam layers. These tie layers may function to hold the functional and polypropylene foam layers together and thus act as adhesives (column 8, line 65 to column 9, line 4). Additionally, Park teaches that typical tie (i.e., adhesive) layers are based on olefin copolymers containing polar functionality, e.g. ester, carboxyl and amide groups, generally prepared by copolymerization of an olefin monomer or graft copolymerization of an olefin polymer with one or more monomers containing the polar functionality. Thus, polypropylene-

maleic anhydride and polypropylene-acrylic acid graft copolymers and the like are effective tie (i.e., adhesive) layers (column 9, lines 5-12).

For claims 1, 2 and 4, it is noted that Park is silent about the infrared absorption property and the suitable blend ratio of the carboxylic acid modified polyolefin containing adhesive layer. However, it is believed that the art of tie (or adhesive) layer is old and well known, and blending suitable amount of carboxylic acid modified polyolefin with unmodified polyolefin is conventional. Note also as evidence of the state of the art Chou et al. (US 4990562) which teaches that suitable adhesive resins for a multilayer sheet structure include polyolefins modified (or grafted) with maleic anhydride, etc., and blends of these polymers with polyolefins (column 6, line 55 to column 7, line 19). As to the infrared property, the Examiner notes that since the prior art combination anticipates the composition of the non-foamed layer of claims 2 and 4, its inherent infrared property in claim 1 is also believed to be anticipated by the prior art combination. As such, in the absence of unexpected results, it would have been obvious to one of ordinary skill in the art to modify Park's polyolefin foam sheet so as to form a tie (or adhesive) layer on the surface, motivated by the desire to obtain a polyolefin foam sheet with a surface layer which provides strong adhesion to a non-compatible substrate for lamination, as taught by Park. Finally, it should be noted that the fact that Park discloses additional structure not claimed in the instant invention is irrelevant.

For claim 3, Park lacks express teaching of incorporating a non-foamed intermediate layer of a long-chain branched polyolefin. However, it is believed that incorporating a non-foamed long-chain branched polyolefin layer in a foamed polyolefin

sheet is also old and well known. Note also as evidence of the state of the art Usui et al. (US 2001/0041236 A1) which teaches that by designing a polyolefin foam sheet to be a laminated foam sheet with a layer of non-foamed polyolefin resin having a long-chain branch, the strength of the unprocessed foamed resin sheet in a heated and softened state is enhanced, and improves the forming efficiency in multiple-piece production of the foamed polyolefin-based resin containers by vacuum or pressure forming ([0021] of US '236). As such, it would have been obvious to one skilled in the art to incorporate a non-foamed intermediate layer of a long-chain branched polyolefin, motivated by the desire to obtain improved processing properties as taught by Usui.

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. In addition, the following references are cited of interest for making foamed polyolefin sheets:

US 5164258 to Shida et al.

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Victor S Chang whose telephone number is 703-605-4296. The examiner can normally be reached on 8:30 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel H Morris can be reached on 703-308-2414. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Application/Control Number: 09/993,678  
Art Unit: 1771

Page 5

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

VSC  
March 26, 2003

DANIEL ZIRKER  
PRIMARY EXAMINER  
GROUP ~~1980~~  
1700

*Daniel Zinker*